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said projection lens support is positionally aligned and connected with said holder by said positioning means, and said display panel and said projection lens support are integrally fixed on said circuit board by a fixing screw.

REMARKS

Claims 1 and 3-7 are presented for consideration, with Claims 1 and 7 being independent.

The specification and abstract have been reviewed and amended to correct minor informalities and improve their idiomatic English form. In addition, the claims have been amended to more clearly recite Applicants' invention and further distinguish it from the cited art.

Claims 1-7 stand rejected under 35 U.S.C. § 103 as allegedly being obvious over U.S. Patent No. 5,963,283 (Omae, et al.) in view of U.S. Patent No. 5,842,761 (Futakami, et al.). This rejection is respectfully traversed.

Applicants' invention as set forth in Claim 1 relates to a projection display apparatus comprised of a display panel provided with first electrodes, a circuit board provided with a drive circuit including second electrodes for driving the display panel, and a projection lens support provided with a projection lens for projecting an enlarged image onto a screen. Also, a holder is fixed on the circuit board for holding the display panel and provided with a connector connected to the second electrodes for electrically connecting the first and second electrodes and also provided with positioning means for the holder and the projection lens support. As claimed, the first electrodes of the display panel and the second electrodes of the circuit board are electrically connected via the connector of the holder by pressing the display panel against the holder to bring the first electrodes into contact with the connector. The

projection lens support is positionally aligned and connected with the holder by the positioning means for optical alignment of the projection lens.

Claim 7 relates to a projection display apparatus comprised of a display panel, a circuit board provided with a drive circuit for driving the display panel, and a projection lens support provided with a projection lens for projecting an enlarged image onto a screen. In addition, a holder holds the display panel and is provided with positioning means for the holder and the projection lens support. The projection lens support is positionally aligned and connected with the holder by the positioning means, and the display panel and the projection lens support are integrally fixed on the circuit board by a fixing screw.

In accordance with Applicants' claimed invention, an easy to maintain and high performance projection display apparatus can be provided.

The primary citation to Omae, et al. relates to a liquid crystal panel that includes a liquid crystal panel 177, a projection lens 174, and a screen 176 for projecting the enlarged image. The Office Action acknowledges that Omae, et al. does not teach or suggest supporting the projection lens or provide a holder associated with any support.

The secondary citation to Futakami, et al. was cited to compensate for the deficiencies in Omae, et al. Futakami, et al. relates to a liquid crystal projector that shows, in Figure 17, a projection lens supported with projection lens tube supports 320 and 330. Screws 340 secure the tube supports together.

In contrast with Claim 1 of Applicants' invention, however, Futakami, et al. is not understood to teach or suggest, among other features, a holder fixed on the circuit board for holding the display panel and a connector connected to second electrodes for electrically connecting the first and second electrodes. In Futakami, et al., circuits 601 and 602 are provided

within a first frame structure 500 but do not serve to fix a holder. Moreover, Futakami, et al. fails to teach or suggest pressing the display panel against the holder to bring the first electrodes into contact with the connector connected to the second electrodes.

With respect to Claim 7, Futakami, et al. also fails to teach or suggest, among other features, providing the display panel and the projection lens support integrally fixed on the circuit board by a fixing screw. As discussed above, the circuit boards in Futakami, et al. are provided within the frame structure but are not used for support.

Accordingly, without conceding the propriety of combining Omae, et al. and Futakami, et al. in the manner proposed in the Office Action, it is submitted that such a combination still fails to teach or suggest Applicants' claimed invention. Therefore, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103 is respectfully requested.

Thus, it is submitted that independent Claims 1 and 7 are patentable. In addition, dependent Claims 3-6 set forth additional features of Applicants' invention. Independent consideration of the dependent claims is respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



Attorney for Applicants
Scott D. Malpede
Registration No. 32,533

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

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VERSION WITH MARKINGS SHOWING CHANGES MADE TO CLAIMS

1. (Amended) A projection display apparatus, comprising:

 a display panel provided with first electrodes[,];

 a circuit board provided with a drive circuit including second electrodes for driving [the] said display panel[,];

 a projection lens support provided with a projection lens for projecting an enlarged image onto a screen[,]; and

 [and] a holder [provided with a connector for a holder] fixed on said circuit board for holding said display panel and provided with a connector connected to said second electrodes for electrically connecting said first and second electrodes and with positioning means for [the] said holder and [the] said projection lens support, wherein

 [the] said first electrodes of [the] said display panel and [the] said second electrodes of [the] said circuit board are electrically connected [by the connector of the holder, respectively, and] via said connector of said holder, by pressing said display panel against said holder to bring said first electrodes into contact with said connector, and

 [the] said projection lens support is positionally aligned and connected with [the] said holder by [the] said positioning means for optical alignment of [the] said projection lens.

Claim 2 has been cancelled.

3. (Amended) An apparatus according to Claim 1, wherein [the] said positioning means of [the] said holder is disposed so as to confront [the] said projection lens support.

4. (Amended) An apparatus according to Claim 1, wherein [the] said projection lens support is provided with another positioning means confronting [the] said projection lens thereby to effect optical alignment of [the] said projection lens in combination with [the] said positioning means of [the] said holder.

5. (Amended) An apparatus according to Claim 1 [or 2], wherein [the] said display panel has a rectangular shape including two longer [two] parallel sides and two shorter [two] parallel sides, and [the] said first electrodes [thereof] are led out on [the] said shorter [two] parallel sides.

6. (Amended) An apparatus according to Claim 1, wherein [the] said circuit board further comprises a converter circuit for converting image signals to be transmitted to [the] said display panel into digital signals.

7. (Amended) A projection display apparatus, comprising:
a display panel[,];
a circuit board provided with a drive circuit for driving [the] said display panel[,];

a projection lens support provided with a projection lens for projecting an enlarged image onto a screen[,] and

a holder for holding [the] said display panel and provided with positioning means for [the] said holder and [the] said projection lens support, wherein [the] said projection lens support is positionally aligned and connected with [the] said holder by [the] said positioning means, and [the] said display panel [held by the holder] and [the] said projection lens support are integrally fixed on [the] said circuit board by a fixing screw.

VERSION WITH MARKINGS SHOWING CHANGES TO THE SPECIFICATION

Please substitute the paragraph beginning at page 1, line 4 and ending at line 8.

--The present invention relates to a projection-type display apparatus, and particularly, a projection-type liquid crystal display apparatus for projecting a modulated picture (image) in an enlarged size onto a screen.--.

Please substitute the paragraph beginning at page 1, line 14 and ending at line 25.

--Referring to Figure 12, the projection-type liquid crystal display apparatus includes a liquid crystal panel 102, a drive circuit substrate 104 for driving the liquid crystal panel 102, a harness (a unit of input and output electrode wires or cables) 105 for the drive circuit substrate 104, a flexible substrate 103 having a plurality of connecting electrodes for connecting the liquid crystal panel 102 to the drive circuit substrate 104, and a projection lens unit 101 for projecting an image based on an image signal outputted via the flexible substrate 103.--.

Please substitute the paragraph beginning at page 1, line 26 and ending at page 2, line 7.

--The liquid crystal panel 102 is firmly attached and fixed to the projection lens [nit] unit 101, e.g., by locating pins so that an optical axis (of an optical system) is in alignment with a focus (of a projection lens). The (positional) alignment of the projection lens unit 101 with the liquid crystal panel 102 is performed by driving the liquid crystal panel 102 while viewing an output image based on an (outputted) image signal.--.

Please substitute the paragraph beginning at page 4, line 10 and ending at line 25.

--[In the] The conventional projection-type liquid crystal display apparatus described above generally outputs analog image signals from the drive circuit substrate 104 to the liquid crystal panel 102 in many cases. However, in recent years, a projection-type liquid crystal display apparatus employing digital image signals has been preferentially used. The projection-type liquid crystal display apparatus using the digital signals ordinarily requires a flexible substrate 103 having the number of pins (terminals) of at least 100. However, at present, such a flexible substrate is not available. Accordingly, it is necessary to provide the projection-type liquid crystal display apparatus using the digital signals with a plurality of flexible substrates in order to ensure at least 100 pins.--.

Please substitute the paragraph beginning at page 6, line 2 and ending at line 4.

--According to the present invention, there is provided [with] a projection display apparatus, comprising:--.

Please substitute the paragraph beginning at page 7, line 25 and ending at line 27.

--According to the present invention, there is also provided [with] a projection display apparatus, comprising:--.

Please substitute the paragraph beginning at page 8, line 24 and ending at line 26.

--Figure 1 is a perspective view of an embodiment of a projection display apparatus according to the present invention.--

IN THE ABSTRACT OF THE DISCLOSURE:

Please substitute the Abstract of the disclosure beginning at page 33, line 2 and ending at line 17.

--A projection display apparatus [is constituted by] includes a display panel provided with first electrodes, a circuit board provided with a drive circuit including second electrodes for driving the display panel, a projection lens support provided with a projection lens for projecting an enlarged image onto a screen, and a holder provided with a connector for the first and second electrodes and with a positioning [means] device for the holder and the projection lens support. The first electrodes of the display panel and the second electrodes of the circuit board are electrically connected by the connector of the holder, respectively. The projection lens support is positionally aligned and connected with the holder by the positioning [means] device for optical alignment of the projection lens.--.